

USAWC STRATEGY RESEARCH PROJECT

**LAW OF LAND WARFARE AND RULES OF ENGAGEMENT:
A REVIEW OF ARMY DOCTRINE AND TRAINING METHODOLOGIES**

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ABSTRACT

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With the continued exposure of US soldiers to enemy hostile action in high threat/high risk areas like Afghanistan and Iraq, the potential for human rights violations will increase. Any violations of the Law of Land Warfare by US troops would become immediate fodder for the propaganda machines of our enemies and could have strategic implications in our fight against terrorism. The intent of this paper is to first examine the status of doctrine dealing with the Law of Land Warfare and the incorporation of Rules of Engagement. Is the doctrine adequate to deal with the complex operating environment faced by the U.S. Army? I will then examine what live, virtual and constructive training tools are available to commanders to train these tasks and make recommendations for the future.

TABLE OF CONTENTS

ABSTRACT.....	iii
LAW OF LAND WARFARE AND RULES OF ENGAGEMENT A REVIEW OF ARMY DOCTRINE AND TRAINING METHODOLOGIES	1
INTRODUCTION.....	1
HISTORICAL BACKGROUND.....	1
DOCTRINAL REVIEW	2
TRAINING SIMULATIONS.....	7
CONCLUSION	12
ENDNOTES	15
BIBLIOGRAPHY	17

LAW OF LAND WARFARE AND RULES OF ENGAGEMENT A REVIEW OF ARMY DOCTRINE AND TRAINING METHODOLOGIES

INTRODUCTION

In the current environment in both Afghanistan and Iraq, ethical dilemmas involving the law of land warfare face soldiers and leaders every day. And because of nearly instant communications and the proliferation of television cameras across the battle space, actions taken by individual soldiers can have strategic implications for our Army and nation. As the war against terror is fought on the asymmetric battlefield, these challenges will continue. In fact, with an increasing world population and the continued urbanization of the planet, the sterile battlefield with clearly delineated forces on both sides, may become a relic of the past. A complex battlefield is the present and the future and the key to successfully navigating this ethically challenging environment is training.

Well trained soldiers at all levels, from the private manning the machine gun to the general approving targeting plans, must understand the law of land warfare and the rules of engagement. They must train as they will fight. They must act decisively in the heat of battle knowing that their training has prepared them to react properly. To achieve that level of proficiency, commanders have access to a number of training simulations. "Live, virtual, and constructive training opportunities are integral components of a commander's training strategy to develop competent, confident, and adaptive leaders, battle staffs, and units."¹

The purpose of this paper is to examine the evolution of current Army doctrine on the Law of Land Warfare(LLW) and Rules of Engagement(ROE), discuss the simulation training tools that are available to train according to that doctrine, and make recommendations for changes to doctrine and the training simulation tools.

HISTORICAL BACKGROUND

The LLW and ROE are not new topics for the US military. However, they take on added influence when operating in the complex environment of Military Operations Other than War (MOOTWA) as the US military has done extensively over the past decade. Because of the ambiguity found in these environments and the limited mandates for action in many of them, the ROE may significantly constrain the action of US forces. If soldiers are not properly trained on the application of ROE, the ROE may have devastating consequences for deployed forces.

A brief examination of two historical examples highlights divergent outcomes that occurred as a result of poorly understood ROE. The first example is the US Army's experience in Vietnam. Although an often quoted objective during the war was to win the hearts and minds of

the people, American actions on the ground often had the opposite effect. It is widely reported that few soldiers received any training on the ROE prior to their arrival in Vietnam and little after their arrival. "Few senior leaders in Vietnam felt that soldiers understood the ROE well before the My Lai massacre, and even fewer believed that soldiers adhered carefully to the ROE."² Because most soldiers did not understand the ROE or the basis for the ROE, many tended to ignore them or find a "creative application" of the ROE that often wound up in the death of civilians.³ The creation of "free fire zones" under the ROE became a justification for targeting civilians, actions that are illegal under international law.

The failure of Marine sentries to prevent a suicide bomber from driving into the Marine Corps barracks in Beirut on October 23, 1983 is a second example of poorly understood and trained ROE. In that case, two Marine sentries standing guard over the marine compound failed to engage a civilian truck that crashed through a concertina barrier, through a rear gate and sandbag barrier and into the ground floor of the barracks before blowing up and killing 241 marines and sailors. Neither sentry had a magazine loaded in his weapon despite the fact that they both possessed ROE cards instructing them to have a magazine in their weapon. The sentry providing security and surveillance of the parking lot witnessed the suspicious behavior of the truck, as it circled the parking lot twice before crashing through the barrier. Even though personally threatened, he never loaded a magazine in his weapon. The second sentry recognized the threat, loaded a magazine into his rifle, chambered a round, but never fired. This failure to act was the result of poor understanding of the ROE and the lack of training in the application of that ROE. As both examples illustrate, ROE that are not understood and trained can have a disastrous effect on the execution of a mission.

From a legalistic standpoint, LLW has been a part of Army training for decades. Soldiers are introduced to the Law of Land Warfare in basic training and it is reinforced each year as part of the Soldiers Manual of Common Tasks. Soldiers of all grades "are responsible for identifying, understanding, and complying with the provisions of the Law of War, including the Geneva and Hague conventions."⁴ They are also "responsible for identifying and notifying the appropriate authorities of any suspected or known violations of the Law of War."⁵ This training is "macro" in scope and not tied to any particular tactical situation.

DOCTRINAL REVIEW

The foundation for all army training on the law of land warfare resides in FM 27-10, *The Law of Land Warfare*. This FM is a review of applicable international law and treaties regarding the means for waging war. It is an important document because it provides the legal basis for

the development of Rules of Engagement and clearly delineates a broad range of prohibited and required conduct in war.

Army doctrine on the incorporation of ROE into military operations has been significantly improved over the past five years. While FMs dated prior to 1999 have almost no mention of a complex battlefield and the necessity of operating within established ROE, those updated in the past five years are significantly improved. A case in point is FM 27-100, *Legal Support to Operations*, dated 1 March 2000 which provides guidance to the Judge Advocate General (JAG) Corps on the critical role they play as advisors to the field commander. As the Subject Matter Expert (SME) on operational law, the Staff Judge Advocate (SJA) provides advice on the legality of military operations. The SJAs “participate in targeting and information operations cells; implement, draft, and train soldiers on ROE; advise commanders on policies relating to conduct and discipline; ensure war plan compliance with the Law of War and customary international law; and ensure soldiers have a basic understanding in the treatment of non-combatants, protected markings, and other particulars of the Law of War.”⁶ This focus on having the SJA work with the field commander in all aspects of mission planning and execution is a positive step leading to true understanding and integration of ROE into military operations.

Because of the significance that ROE play in current military operations, a whole chapter of FM 27-100 is dedicated to them. Chapter 8 states that “Effective ROE are enforceable, understandable, tactically sound, and legally sufficient. Further, effective ROE are responsive to the mission and consistent with unit initiative.”⁷ This linkage of the legal to the tactical is a huge doctrinal step for the US Army.

Continuing this “practical” approach to ROE, this chapter also mandates “Commanders at all echelons use the Interpret-Draft-Disseminate-Train methodology to incorporate ROE into the conduct of military operations.”⁸ Commanders at all levels must interpret the ROE passed to them by higher headquarter, draft their own ROE consistent with that guidance, disseminate that guidance to subordinate units and then train those necessary tasks to a pre-determined standard.⁹

The chapter further states that “ROE should always include situational training. This situational training should challenge soldiers in employing weapons, levels of force, and other ROE. Situational training exercises (STXs) focus on one or a small group of tasks— within a particular mission scenario—and require that soldiers practice until the tasks can be executed to some pre-established standard.”¹⁰ This concept of identifying tasks, the conditions under which the task must be accomplished and the standard by which the task will be judged, mirrors that found in FM 7-0, *Training the Force*.

One recommended training device is the mnemonic RAMP shown in the figure below.

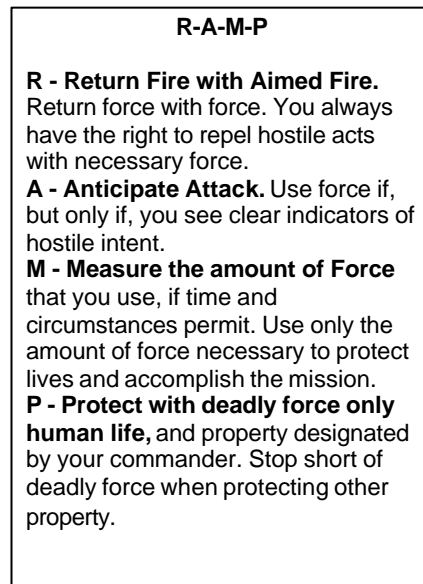


FIGURE 1

“Because R-A-M-P principles incorporate necessity and proportionality, RAMP training provides a solid framework upon which mission-specific ROE training can build.”¹¹

The FM 27 series discussed above provides outstanding guidance for JAG officers. However, for doctrine to be effective, the principles discussed in that series must be known and understood by the fighting force. FM-1, *The Army*, states that “Agile forces will be required to transition from stability operations and support operations to warfighting and back.”¹² For that to happen, the principles of LLW and ROE must be present throughout all levels of Army doctrine to ensure understanding throughout the force.

A review of doctrine for Combined Arms Operations at the brigade and battalion level shows that this has been done with mixed effectiveness. First, TRADOC has recognized the changing face of the battlefield in the development of FM 7-100, *Opposing Force Doctrinal Framework and Strategy*. This capstone document defines a Contemporary Operating Environment (COE) that is variable in nature. It defines an operating environment that encompasses the full spectrum of warfare and the complex social, political and economic

environments into which U.S. forces may be committed. By changing the nature of the threat from a monolithic, Soviet style, state based enemy to a much more diverse model, training units are forced to contend with a more complex battlefield. This new operating environment significantly raises soldier awareness of the ROE to deal with this ever changing enemy.

The foundational combined arms doctrine found in the FM 3-X series of field manuals provides extensive guidance on the incorporation of the principles of LLW and the development of ROE. One of the most significant fundamental differences from earlier doctrine, found in this series, is in the area of mission analysis. Most Army doctrine dated prior to 1999 states that mission analysis is METT-T driven. That is the analysis of the mission, enemy, terrain and weather, troops, and available time (friendly and enemy). In this FM 3 series and all new doctrine, a new letter “C” is added for civil considerations (METT-TC). Commanders are now directed to consider “refugee movement, humanitarian assistance requirements, or specific requirements related to the rules of engagement (ROE) or rules of interaction (ROI)”¹³ when conducting their mission analysis.

Some specific examples of this new doctrine include FM 3-06.11, *Combined Arms Operations in Urban Terrain*, which provides doctrine and the special considerations necessary to deal with non-combatants on the urban battlefield. Specifically, this manual provides guidance to incorporate Civil Affairs, Psychological Operations, Military Police and civil authorities when planning urban operations. It directs units to closely analyze their ROE for dealing with non-combatants to include the use of lethal or non-lethal force. It also directs them to treat non-combatants with “dignity and respect” and to plan for moving them away from combat operations. In addition, it directs them to plan for immediate humanitarian assistance where the situation dictates.¹⁴ This manual also states that the existence of civilians on the battlefield may significantly impact on the type and volume of fires allowed into an area. It directs that use of munitions be included in the ROE.¹⁵ FM 3-07, *Stability Operations and Support Operations*, provides an extensive appendix on the development of ROE. It offers an ROE considerations matrix which lists international law, mission requirements, commander’s intent, threat, tactics and weapons, U.S. policy and host nation legal requirements.¹⁶ FM 3-09.31, *Tactics, Techniques, and Procedures for Fire Support for the Combined Arms Commander*, specifically addresses the role of the SJA for providing advice on the application of ROE during planning and execution and on the legal ramifications of fires against specific targets.¹⁷ By doctrine, the SJA now provides input during both the planning and execution of fires. As an example, the SJA may advise a commander that it is permissible to shoot counter-battery fires at an enemy artillery position despite the fact that it is located in a heavily populated

area or culturally sensitive site. He may also advise that only tube artillery, firing high explosive rounds, be used to avoid the collateral damage that would be caused by rocket fires. Each of these Field Manuals highlights the acute awareness in Army doctrine of the need to consider LLW and ROE considerations in all Army operations.

While the FM 3 series of FMs significantly raises the awareness of ROE in combined arms doctrine, the awareness does not always extend down to the battle drills that small units use to build proficiency. An example of this phenomenon is found in FM 3-21.71, *Mechanized Infantry Platoon and Squad (Bradley)*. This FM addresses ROE and Rules of Interaction (ROI) in mission analysis and planning. However, in Appendix E, Battle Drills, there is no mention of ROE in any of the drills or acknowledgement of a complex battlefield encompassing non-combatants.

At the brigade and below level, doctrine regarding ROE and LLW varies according to publication date of the any given manual. In the case of the Infantry Field Manuals, there is a relative paucity of doctrine pertaining to LLW and ROE. As an example, FM 7-30, *The Infantry Brigade*, FM 7-20, *The Infantry Battalion* and FM 7-10, *The Infantry Rifle Company*, provides no discussion of LLW or ROE aside from their new Urban Operations Appendices. The command and control sections, to include mission analysis, offensive operations and defensive operations are missing any discussion of ROE or civil considerations. While the information is available in the Urban Operations appendices, the primary user of these manuals would not generally look into that appendix unless he was planning an urban operation.

Infantry Mission Training Plans (MTP) published in the past three years have included ROE considerations. As an example ARTEP 7-12-MTP, *Mission Training Plan for The Stryker Brigade Combat Team Infantry Company*, includes ROE considerations in most individual tasks. The task of "Conduct an Attack" states in the conditions that "the company has been provided guidance on the rules of engagement (ROE) and rules of interaction (ROI). Coalition forces and noncombatants may be present in the operational environment."¹⁸ (5-39) Clearly the addition to our Mission Analysis doctrine of the "C" civil considerations in METT-TC raises awareness of leaders to their LLW and ROE responsibilities.

At the individual leader level, Training Support Packages (TSPs) exist for training LLW and ROE. TSP number 181-A-1001, *Conduct Company Level Combat Operations Consistent with The Law of War and Law Affecting Peacemaking and Peacekeeping Operations, Rules of Engagement and Other Legal Constraints*, was designed for officer and warrant officer advanced courses. Complementing the advanced course product is 181-L-1001, *Conduct Small Unit Combat Operations According to the Law of War*. This TSP was developed for pre-

commissioning training and officer basic courses. These training packages along with individual soldier common task training on the Law of War and the Geneva and Hague Conventions provide the foundational basis for the incorporation of these tasks into all battle tasks. While providing an excellent overview of the Law of War, these TSPs are much more focused on what the junior officer is prohibited from doing and less on how to protect his force with clearly delineated and understood ROE. This TSP is also focused on MOOTW and less on conventional combat operations where the same issues are present but the risk to the force is much higher.

While this review of doctrine shows that there is still inconsistency in Army training doctrine regarding the incorporation of ROE and LLW into battle focused training at all levels, there has clearly been tremendous progress over the past five years. As each series of Field Manuals is updated and new MTPs created, the challenges of the complex battlefield are recognized and the use of ROE to deal with them addressed.

TRAINING SIMULATIONS

Why focus on simulation for training LLW and ROE? FM 7-1, *Battle Focused Training*, states that "Commanders' training strategies use a mix of live, virtual, and constructive (L-V-C) training to achieve and sustain unit and staff proficiency."¹⁹ It also states that "Battalion commanders leverage V-C training events to accelerate junior leader mastery of tasks directly related to tactical competence, confidence, and proficiency."²⁰ Clearly, training doctrine dictates the use of simulation to achieve proficiency in this key area. "Live, virtual, and constructive training opportunities are integral components of a commander's training strategy to develop competent, confident, and adaptive leaders, battle staffs, and units."²¹

So what simulation tools are available to commanders to train? First, a definition of key simulation terms is necessary. A **live** simulation is "a representation of military operations using live forces and instrumented weapons systems interacting on training, test, and exercise ranges which simulate experiences during actual operational conditions."²² Live training involves real people operating real systems in the field. Live simulations provide the stress and decision-making that is associated with human-in-the-loop simulations. An example of a "live" simulation is a squad force-on-force exercise where the participants are maneuvering on the ground, with themselves and their assigned weapons equipped with Multiple Integrated Laser Engagement System (MILES) to simulate the effects of the weapon.

A **virtual** simulation is "a synthetic representation of warfighting environments patterned after the simulated organization, operations, and equipment of actual military units."²³ Virtual

simulations involve real people operating mechanical models designed to replicate an actual operating environment. They are usually designed for individuals or crews and focus on training specific operator tasks. The operators are immersed in an environment that to them looks, feels, and behaves like the real thing. The crew must operate the equipment, receive commands, and control weapons just as in a real system. An example is a flight simulator or the Army's Close Combat Tactical Trainer (CCTT).

Constructive simulations "involve real people making inputs into a simulation that carries out those inputs by simulated people operating simulated systems."²⁴ Constructive simulations are usually used to train staffs because they can aggregate people and things to allow the incorporation of large forces. Real people stimulate events but the simulation determines event outcomes. The major constructive simulations used by the Army for training today are the Brigade Battle Simulation (BBS), Janus, Joint Conflict and Tactical Simulation (JCATS) and Corps Battle Simulation (CBS).

These simulation environments are not mutually exclusive. In fact, much of the simulation development being done today involves the linkage or confederation of each of these simulation domains into one synthetic environment. As an example, a helicopter pilot flying in an AH-64 simulator in FT Rucker may be linked to a brigade fighting a "live" simulation at the National Training Center (NTC). That helicopter pilot may attack a simulated enemy force, portrayed in a "wrap-around" constructive simulation that is "over the horizon" preparing to attack the live force at the NTC. The live force may "shoot" artillery in support of the virtual aircraft. The success of the deep attack will determine the number of live forces that enter into the "live" box at the NTC.

The discussion that follows is not an exhaustive listing of all training simulations. Instead, it is an examination of the most common training simulations available to Corps and Division units and their most common applications. It also does not include a discussion of any LLW/ROE simulator. Some distance learning tools are currently available for training soldiers on the fundamentals of LLW/ROE. However, there is no dedicated individual or collective training simulation designed exclusively for training this subject. Army units are supposed to train the way they fight, so ROE/LLW training must be embedded into all other tactical training.

The simulations used to support this training vary according to the echelon at which the training occurs. The primary focus of the Training and Doctrine Command's (TRADOC) Battle Command Training Program (BCTP), is Corps and Division level commanders and their staffs. Because of the vast array of forces involved, a constructive simulation, Corps Battle Simulation (CBS), usually serves as the backbone simulation for BCTP "Warfighter" exercises. While CBS is a highly aggregated, low fidelity model, it serves as the driver for large exercises. "White

Cells” composed of subject matter experts fill in the details in areas where the simulation is lacking them.

The areas most frequently associated with ROE/LLW issues during “Warfighter” exercises are targeting and fires.²⁵ The simulation portrays populated areas, POWs, refugees, etc. but not in a detailed manner. The “white cells” flesh out the situation for the player units and can add complexity to a situation. For instance, the simulation does not have the terrain resolution to show individual protected sites such as a church or hospital. Nor does it model individual entities such as a single artillery piece or individual people on the battlefield. However, the white cell can provide feedback to the player unit that artillery fires that they acquired on counter-battery radar emanated from a hospital parking lot filled with non-combatants. The simulation feedback coupled with the white cell input stimulates the targeting cells to consider munitions selection, clearance of fires, observation of fires, and awareness of non-combatants on the battlefield.

As preparation for a Corps “Warfighter” exercise in 2002, the III Corps conducted a Fire Support Seminar to address the issue of targeting a “COE OPFOR in populated areas while ensuring friendly fires are prompt, responsive, effective and don’t violate the ROE.”²⁶ Knowing that they would be faced with this conflict during the simulation, the Corps commander wanted to ensure that he had a deliberate decision making process in place and that process was documented through the use of a targeting record for each fire mission.²⁷ The result was a targeting record that listed the military necessity, collateral damage, mitigation of civilian casualties and proportionality assessment.

During the course of the Warfighter Exercise, using CBS as the simulation driver, the Corps was constantly faced with challenging decisions involving the use of fires. These included the presence of enemy artillery and ammunition supplies in civilian buildings, enemy direct fire anti-tank systems placed in school houses and enemy missile systems in civilian areas but outside the range of direct or indirect weapons systems.²⁸ In each case, the Corps was forced to evaluate the military nature of the target, the necessity of hitting the target and to make a proportionality assessment when deciding on how to engage each target.²⁹ Collateral damage concerns were present in all cases. This use of simulation challenged the unit to develop Tactics, Techniques and Procedures (TTP) which they will employ during their deployment to Iraq.

The most commonly used training simulations available to commanders from the company through brigade level are the Brigade/Battalion Simulation (BBS), Janus and Joint Conflict and Tactical Simulation (JCATS). Each of these simulations, to varying degrees, allows

the integration of non-combatants onto the battlefield. These constructive simulations are entity based models, i.e., individual people and equipment are portrayed within the simulations. As is the case with CBS, Janus and JCATS are excellent tools for training ROE for the use of indirect fires. The availability in each of high resolution terrain, the ability to create discernable non-combatants and combatants in close proximity and the ability to select specific weapons and munitions creates a high resolution tool. These simulations provide the capability to deal with issues such as enemy positioning in normally protected sites, co-locating of enemy forces in civilian population centers, and counter-battery fires against unobserved targets. The simulation will provide feedback on "collateral damage" from the use of indirect fire systems.

A shortcoming of these simulations is in the area of direct fires. In both JCATS and Janus, an intent or status must be assigned to each force. The relationship between sides must be defined. If civilians are listed as neutral or friendly, they will not be engaged by friendly forces. So, in the case of a direct fire ambush, initiated from a building on a busy city street, the force attacked will return fire only against the attacker. Any civilian or "neutral" players can walk through the ambush site and not be engaged. Because the simulation does not kill the innocent bystanders, negative training may take place as soldiers learn that the appropriate response during an ambush is to return indiscriminate massed fires without consideration for the consequences suffered by the civilian population.

As they are currently designed, virtual simulations offer the greatest potential for training individual soldiers on the application of ROE. However, most if not all scenarios available for training on the major training systems do not include ROE/LLW scenarios. For individuals and squads, one of the most powerful training tools is the Engagement Skills Trainer (EST) 2000. The EST 2000 is a Windows-based simulation system that can be used for basic marksmanship training or for squad level collective training exercises. Soldiers fire one of the 11 weapons programmed into the system, an air compressor hidden behind the scenes provides them with a recoil that simulates that particular weapon while a studio sound system creates realistic firing sounds and explosions.³⁰ The EST 2000 also provides the capability to train military police "shoot-don't shoot" scenarios that include civilian hostages and bystanders. This capability is not incorporated into the infantry based training scenarios. Of all the simulation shortcomings, this is the easiest one to fix since it only involves updating of scenarios, not a major change to the underlying simulation code.³¹

The Close Combat Tactical Trainer (CCTT) is a system of manned modules and workstations that allow units to train armor, cavalry, and mechanized infantry collective tasks at the platoon through battalion task force level. "These components operate in a common

synthetic battlefield using computer generated forces, a fiber optic network and protocols, and a fully Distributed Interactive Simulation (DIS) interface to create a realistic virtual battlefield.”³²

The CCTT includes Semi-Automated Forces (SAF) that create a wide variety of computer generated OPFOR and BLUFOR vehicles and units. While it provides an outstanding training environment for mechanized and armor soldiers and leaders, it does not adequately meet the training requirements for ROE and LLW. For instance, OPFOR SAF tactics are based on the armor and mechanized based opposing force model contained in FM 100-60. They have not been updated to the COE as described in FM 7-100. In addition it is designed as a two sided simulation with BLUFOR and OPFOR workstations. In this environment, it is difficult to deal with the ambiguities imposed by the presence of non-combatants of differing allegiances on the battlefield. As a result, CCTT does not provide the conditions for training ROE/LLW.

Needed improvements to the system are the addition of a “White Cell” workstation, with appropriate SAF. In addition, scenarios upgraded to reflect current MTPs involving civilians, guerillas, and POWs would substantially improve commander’s abilities to train subordinate forces on ROE/LLW prior to entering a combat theater.

For brigade and below level units, live training exercises offer the most realistic opportunities for training ROE/LLW. As the result of evolving doctrine, especially the development of the COE as described in FM 7-100, each of the Combat Training Centers (CTCs) has undergone significant change. The CTCs provide a COE OPFOR that represent conventional, unconventional and non-combatant forces on the battlefield.

Live training exercises allow commanders to train under conditions most closely resembling those under which they will fight. The use of instrumented ranges and MILES systems allows the most realistic training available. Soldiers must execute missions in challenging environmental conditions (poor weather, low visibility, etc.) and stressed by lack of sleep. They must maintain and employ their weapons against an uncooperative enemy.

Mission Rehearsal Exercises (MRE/MRX) are outstanding examples of a live training environment where ROE are trained and evaluated. Mission specific vignettes are developed to place soldiers in challenging situations and validate their understanding of ROE. In preparation for their May 2000 deployment to Kosovo as part of KFOR, 1st Armored Division conducted a MRE for the 1st Brigade Combat Team. During the course of the exercise, soldiers and leaders were continually faced with challenging situations that tested their understanding of ROE. Border incursions, hostile crowds in villages and terrorist attacks on base camps all tested the units understanding and application of ROE. Soldiers were faced with a complex battlefield, crowded with non-combatants and constantly changing. Like most training exercises,

weaknesses in ROE training were exposed. Soldiers took under direct fire a “civilian” who had mistakenly crossed the border. In another instance soldiers failed to follow the established ROE and allowed a vehicle loaded with a bomb to drive into the soldiers living area. In each case, the soldiers and leaders involved received feedback through an After Action Review (AAR) and were able to retrain the tasks to standard.

CONCLUSION

In summary, US Army doctrine involving Law of Land Warfare and Rules of Engagement has undergone significant changes in the past five years. While the underlying Law of War has not changed in decades, the threat environment has changed considerably. The development of the Contemporary Operating Environment (COE) OPFOR doctrine recognizes the changing and evolving threats US forces face around the world. Recent updates to war fighting Field Manuals reflect the changing threat and provide clear guidance for the development of ROE that ensure mission accomplishment while complying with the LLW. But, there are holes in the current doctrine. The key FM for brigade and battalion level infantry and armor operations are dated and do not reflect current doctrine. Infantry battle drills are also dated. The sheer volume of doctrinal literature prohibits any over-night fix. However, US Army doctrine is consistent and evolving in the right direction.

US Army training simulations provide a valuable tool to the commander. They provide a low-cost mechanism to conduct battle-focused training. Commanders can employ a combination of live, virtual and constructive simulations to reinforce ROE training objectives. The greatest shortcoming of these tools is their failure to keep up with the changing OPFOR environment. Virtual simulations offer the opportunity to provide extremely realistic training for individual and small units. However, little money has been spent to adapt these tools.

For example, at FT Hood, Texas, III Corps became aware of the lessons learned on convoy ambushes coming out of Iraq. To address this critical vulnerability, they developed a “convoy trainer” simulation that linked a constructive simulation, JCATS, with Virtual Reality Scene Generation (VRSG) software and the EST 2000. This tool allowed soldiers and leaders to practice convoy procedures and react to ambush. While providing valuable training, the convoy trainer is limited in its ability to incorporate ROE issues into the simulation because of the inability to portray realistic non-combatants in the EST 2000. A capability that is technically feasible but has not been funded.

The current slate of constructive simulations also offers an excellent mechanism for the incorporation of LLW/ROE issues during training. Multi-sided, entity based constructive

simulations are capable of portraying a complex battle field that stresses training units on the use of ROE. Improvements in direct fire attrition methodologies to represent the potential for collateral damage to civilians from direct fire could significantly improve the value of these simulations.

The U.S. Army is clearly on the right track addressing ROE/LLW. Doctrine is in place to guide units as they train and deploy for combat operations. A robust live, virtual and constructive training system is available to reinforce the new doctrine. However, an advocate for incorporating ROE/LLW capabilities into our simulations is needed. The Simulation Change Request (SCR) process is laborious and requires consensus to fund change. Until that advocate is found, ROE inspired changes will lose the funding battle to other operational change requests coming from the field.

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ENDNOTES

¹ Department of the Army, *Training the Force*, FM 7-0 (Washington, D.C.: U.S. Department of the Army, 22 October 2002), 4-39.

² Mark S. Martins, "Rules of Engagement For Land Forces: A Matter of Training, Not Lawyering," *Military Law Review* (Winter 1994): 143 Mil. L. Rev. 1, p.6 [data base on-line]; available from Lexis-Nexis; accessed 1 December 2003.

³ Ibid.

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